

The turning of the countersunk head screw 37 is converted into an axial movement of the countersunk head 39 (relative to the axis of the pin) ...

A second wedge mechanism is formed by the conical surfaces expanding the pin head 44, whereby the afore-said axial movement is once again stepped down into a radial movement of the regions of the pin head 44. Very accurate and sensitive longitudinal adjustment of the cutter 18 is thus possible. (Basteck, column 3, lines 20-30)

One reason that such precise, predictable adjustments are ensured is the fact that the screw 37 is attached directly to the pin 32. If, instead, the screw were attached directly to the holder, there is a serious risk that such precision could not be attained, for the following reason. As the screw 37 is screwed-down with the screw head in contact with the pin head 44, the screw head will radially expand the pin head (and thereby adjust the cutter) if the pin remains axially stationary. However, since the screw is directly secured to the holder, the screw head will also apply a considerable axial force to the pin 32 (in contrast to the case where the screw is directly connected to the pin). That makes it more likely that axial movement of the pin will occur, either instead of, or simultaneously with radial expansion of the pin head, thereby eliminating the predictable sensitive cutter adjustments intended by Basteck. Consequently, unless there was a good reason to directly connect the screw to the holder, no artisan would be motivated to do it.

The final rejection attempted to present such motivation as follows:

Basteck teaches that there is a problem with the wedging device coming loose. Matthews teaches it is well known in the art to extend a wedging device into the tool holder to resolve this issue. Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the wedging device and holder as taught by Basteck to include the wedging device movably attached directly to the holder as taught by Matthews to threadedly engage the holder for the purpose of ensuring that the cutting insert is effectively wedge-locked against accidental removal from the tool holder and to provide maximum strength and rigidity. (Final Rejection, page 5)

However, applicant disagrees. Basteck explains that the reason why the screw may become loose is due to a weak spring force exerted by the pinhead against the screw head which is insufficient for preventing rotation of the screw.

The weakening of the pin head 44 should be so adjusted that the spring force by which the countersunk head 39 is clamped gives rise to sufficient frictional resistance to prevent unintentional loosening of the countersunk head screw 37. (Basteck, column 3, lines 45-48).

That problem will not be eliminated simply by directly attaching the screw to the holder, because the strength of the spring force applied by the pinhead to the screw head will not be affected by changing the location of attachment of the screw. The reason why Matthews' arrangement secures the screw 26 against loosening is because the screw creates a wedge locking action, i.e., the screw head, the wedge 210, and the cutter 5 are strongly jammed (clamped) together between the fixed walls of the holder 4. That would not occur in Basteck, even if Basteck's screw 37 were directly attached to the holder, because Basteck's screw is not functioning to lock the cutter in place, but is rather is functioning to make precision adjustments of the cutter. (In Basteck, the cutter is secured in place by a clamping claw 19.) The only time that any jamming (clamping) of Basteck's screw head could occur is when the pin head is radially expanded so far that the pin head (i.e., the left side of the pin head in Fig. 2) contacts the wall of the bore 45. However, as Basteck points out in column 3, lines 31-37, that contact prevents further expansion of the pin, i.e., further cutter adjustment is prevented. Accordingly, it is submitted that Matthews provides no motivation for directly attaching Basteck's screw to the holder.

In light of the foregoing arguments, it is requested that the rejection of claims 1-7 be withdrawn and the application be allowed.

Respectfully submitted,

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